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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/895,933	06/29/2001	Wayne Nelson	41081.1.2.	9388

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EXAMINER

SCOTT, JAMES R

ART UNIT PAPER NUMBER

2832

DATE MAILED: 04/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/895,933

Applicant(s)

NELSON ET AL.

Examiner

James R Scott

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 15-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 144 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☒ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-14, drawn to a membrane keyboard assembly, classified in class 200, subclass 5a.
- II. Claims 15-26, drawn to a method of making a membrane switch circuit layout, classified in class 29, subclass 622.

The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the membrane switch circuit can be made by a different method. Instead of printing the top surfaces of the first and second membrane layers with a conductive circuit trace, preformed circuit patterns with adhesive backing could be adhered to the top surfaces of the first and second membrane layers. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Alicia Mills on 3/17/2002 a provisional election was made with oral traverse to prosecute the invention of Group I, claims 1-14. Affirmation of this election must be made by applicant in replying to this Office action.

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Claims 15-26 of Group II are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Drawings

The drawings filed on 6/29/2001 are acceptable subject to correction of the informalities indicated on the attached "Notice of Draftsperson's Patent Drawing Review," PTO-948. The correction of the drawings is held in abeyance pending the indication of allowable subject matter.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the specific structural features stated in claims 13 and 14 concerning the relationship of the first, second and third membranes must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Abstract

The abstract of the disclosure is objected to because the abstract is contradictory concerning the membrane layers in number. The abstract description applies only to a three-layer membrane switch device with the middle layer constituting a spacer with through holes. Applicants switching device consists of at least three layers since the conductive traces on each of the uppermost and lowermost membrane layers engage one another to complete a circuit and through holes are structurally provided in the membrane. Applicants do not provide for a description of the two-layer membrane switch circuitry.

Correction is required. See MPEP § 608.01(b).

Specification

35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact in describing the multiple layer membrane switch circuit layout and in particular when three membrane layers are used. The description on page 6, lines 9-13 is insufficient in describing the multiple layer membrane switch circuit layout. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Applicant should avoid the entry of new matter.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1-14 do not clearly describe an operative membrane switch device. It is not clear if applicant intends to claim static structure such as printed circuit paths on multiple layers or structure, which is capable of interacting such as flexible membranes of a membrane switch, and the circuitry located on fixed and movable layers.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Maser.

Note the first membrane 1 and the second membrane 81 in figs. 10-14. The second membrane 81 has a cut outs or through holes 84 in which the conductive traces 192, on the first membrane upper surface 2 are connected to the conductive traces 192b, 192 on the second membrane upper surface 82. Note column - 9, line 33 to col. 10, line 64 and in particular col. 10, lines 27-40 and col. 10, lines 52-64. Use of conductive ink for the circuit traces is found at col. 3, lines 60-65 and col. 10, line 65 to col. 1, line 5. The membranes are made of electrically insulation material. Note col. 14, lines 40-68. An adhesive can be located between the first and second membrane members noting the Maser teaching at col. 10, lines 58-60. Conductive traces 173 and 178 are electrically

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isolated from conductive traces 192,186 printed on the upper surface of the second membrane member 81

The limitations of claims 8 and 9 are anticipated by the teaching at col. 10, lines 58-60 because inherently the adhesive covers the bottom surface of the second membrane member 81 and the openings 84 do not have an adhesive backing. The adhesive layer referred to at col. 10, lines 58-60 has opening corresponding to the openings of the second member membrane openings 84.

Claims 1, 13 and 14, insofar as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by O'Rourke. Note the layers 1,30 and 40 in figures 2-4 and the through holes in the second and third membranes 30 and 40.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maser considered with Larson et al.

Maser teaches at col. 14, lines 54-56 that the thickness of the insulating layer may have a range or thickness of 0.002 mm to 0.13 mm. Therefore, Maser does not teach the thickness of the insulating layer as claimed by applicants

However, Larson et al teach at col. 2, lines 38-49 that the substrate or membrane may have a thickness of approximately 0.005 inch which falls within the claimed range of values asserted by applicants. Prior art, which discloses a value falling within the claimed range of values, is anticipatory of the claimed subject matter; In re Wertheim.

Therefore it would have been obvious to those skilled in the art to modify the Maser first and second membranes to have the approximate value range for thickness as suggested by Larson in order to provide a more efficient operating membrane switch.

Cited References

Riniker discloses a flexible pressure sensitive switch actuator module having a double-sided adhesive 22,24 located on a spacer 20. Nellis et al disclose the use of an electrical interconnector including compressible conductive plastic rods. Seeger (744) discloses the use of a membrane type switch arrangement including first, second and third membrane layers 26,33,27. Note figs. 6,7 and 9. In Seeger, Jr. (975), note the figure 5 components. In White et al note the circuitry in figs. 26-30. In Hendricks note fig. 13 and the interconnect at 195,21g, 23g, 177 and the through hole 193 in the spacer

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which allows switching between layers 21g and 23g, 177. Note also figs. 12-14 and col. 14, line 10 to col. 15, line 25.

Summary

Claims 1-14 are rejected

Claims 15-26 are withdrawn as being directed to a non-elected invention.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to James R Scott whose telephone number is 703-308-2013. The examiner can normally be reached on any workday between 1-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on 703-308-7619. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3432 for regular communications and 703-305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1782.

JRScott: jrs

March 18, 2003


J. R. SCOTT
PRIMARY EXAMINER
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